

DETAILED ACTION

This action is responsive to the amendment filed 6/03/2011. Accordingly the claims have been amended and new claims 24-25 have been added.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but applicant's amendments have necessitated a new ground(s) of rejection based on Thomas in view of Lopez as noted below. In response to applicant's arguments that Thomas does not disclose a portion of the steel mesh traversing the indentation along a line parallel to the edge on which the indentation is located; Thomas does disclose reinforcing member 48 which traverses the tapered indentation in the claimed manner, the member 48 is considered part of the reinforcing mesh 50 as it is connected to and used in conjunction with the mesh 50. Therefore, Thomas does disclose the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3,9,11-15,18-22, 24,25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas (5678372) in view of Lopez (4372092).

Claim 1. Thomas discloses a modular building system comprising:

(a) multiple portable pre-cast modules (14), wherein each of the multiple modules comprise:

- (i) structural steel mesh (48,50; Col. 3, lines 66-67, Col. 5, lines 5-14);
- (ii) cementitious mortar encasing the structural steel mesh (Col. 3, lines 53-54);

and

(iii) tapered indentations (44) located along edges of the module and exposing portions of the structural steel mesh (as seen in the figures), each exposed portion of the structural steel mesh (portion 48) traversing a respective tapered indentation along a line parallel to a respective edge of the module along which the respective tapered indentation is located;

- (b) metal plate connectors (64); and

wherein the tapered indentations located along edges of the adjacent modules are aligned with each other, the metal plate connectors are situated in the aligned tapered indentations of the adjacent modules, and the adjacent modules form a wall (as seen in the figures).

Thomas does not expressly disclose welds between the metal plate connectors and the exposed portions of the structural steel mesh thereby connecting adjacent modules; instead Thomas discloses ties and bends (66) for connecting the steel mesh and the plate connectors.

It is notoriously common and well known in the art to use welds as apposed to ties or bends for securing metal reinforcing. For example Lopez discloses wire mesh that is welded at junctures (Col. 5, lines 28-31). At the time the invention was made it

would have been obvious to one of ordinary skill in the art to substitute the bends (64) of Thomas for a welded connection to provide a more secure and efficient connection of the adjacent metal members.

Claim 3. Thomas discloses the modular building system of claim 1, further comprising: a pourable material (Col. 6, lines 7-13) on the edges of the module in contact with an adjacent module but does not expressly disclose that the pourable material is an epoxy resin.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the pourable material of Thomas to be an epoxy resin, where epoxy resins are known for their strength and corrosion resistance, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In re Leshin, 125 USPQ 416.

Claim 9. The modular building system of claim 1, further comprising:
(e) reinforcing steel mesh (the other of the two reinforcing meshes 50 – Col. 5, lines 5-14); but does not disclose at least one of solder and ties connecting the reinforcing steel mesh and the structural steel mesh.

However, it would have been well within the general knowledge and skill of one of ordinary skill in the art to connect the two meshes via ties (where Thomas discloses it is common to secure via ties) or solder (where Lopez discloses it is known to secure by weldament) where such a connection would allow the reinforcing to act as a single and

solid reinforcing throughout the entire panel thereby more efficiently and stably reinforcing the panel.

Claim 11. The modular building system of claim 1, wherein the module is one of: (i) a square, (ii) a rectangle, (iii) a triangle, and (iv) a trapezoid (as seen in the figures).

Claims 12-15,18-19. Thomas in view of Lopez disclose the modular building system of claim 1 but do not disclose the specific claimed design parameters of the structural steel mesh and panel. However, Thomas does disclose that it would be obvious to modify the specific dimensions and parameters to accommodate various building requirements (Col. 10, lines 14-34). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a structural steel mesh having a yield stress between 4000 and 6000 kt/cm² or a diameter of 4mm and a spacing of 100mm x 50mm x 100mm x 100mm; a module overall dimension of 750 or 1500 mm x 250mm with a thickness of 40mm; a cementitious mortar including Portland cement, water and sand having a max particle size of 4.8mm, to achieve the desired strength to meet the loads imposed on the panel, since it has been held to be within the general skill of a worker in the art to select a known material (in the instant case the desired steel bars) on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. In the instant case it would be obvious for at least the reason of accommodating and withstanding a certain load without failure, where the claimed design parameters are determined through routine engineering.

Claim 20. The modular building system of claim 9, wherein the tapered indentations located along edges of the module expose portions of the reinforcing steel mesh (as seen in the figures, and noted in the disclosure).

Claim 21. The modular building system of claim 1, further comprising: (g) cementitious mortar filling voids in the tapered indentations between the cementitious mortar encasing the structural steel mesh, the metal plate connectors, and the welds (Col. 6, lines 7-13).

Claim 22. The modular building system of claim 1, wherein the multiple portable pre-cast modules are placed at least one of (i) horizontally adjacent and (ii) vertically adjacent to one another to form a wall (as seen in the figures).

Claim 24. The modular building system of claim 1, wherein the tapered indentations of adjacent modules are aligned with each other such that spaced apertures are formed along the edges of the adjacent modules (as seen in figure 4).

Claim 25. The modular building system of claim 24, wherein one metal plate connector is situated in each of the spaced apertures formed along the edges of the adjacent modules (as seen in figure 4, where only one segment of 64 is in each of the spaced apertures).

Claims 2,16-17,23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas (5678372) in view of Lopez (4372092) and further in view of Jazzar (7121061).

Claims 2,23. Thomas in view of Lopez disclose the modular building system of claim 1, but do not disclose that each module includes a 90 degree appendix on opposite edges of the module.

Jazzar discloses a system of prefabricated wall modules where each module includes a 90 degree appendix on opposite sides (see the figures).

At the time the invention was made it would have been obvious to one having ordinary skill in the art to modify the panel of Thomas to include a vertical 90 degree appendix on opposite edges to facilitate connection to an adjacent member and provide additional stability to the panel.

Claims 16-17. Thomas as modified by Lopez and Jazzar disclose the modular building system of claim 2, but do not expressly disclose that each 90 degree appendix has a length between 30 mm and 100 mm or a length of approximately 50 mm from the edge of the module.

However, applicant has not disclosed that the claimed dimensions provide an advantage or solve a stated problem. Furthermore it appears that the appendices of Jazzar and applicant's claimed appendices would perform the same function of strengthening the module and providing a secure connection means equally well. Further it is noted that the modules of Jazzar and applicant's claimed invention are for the purposes of building structures, and therefore would be subject to size limitations and requirements based on the design and function of the building, and that these limitations would vary depending upon the loads subjected to the modules. Therefore it appears to be a mere matter of design choice, based on routine engineering, that would

have been obvious to one of ordinary skill in the art at the time the invention was made to modify the appendices of the prior art to have the claimed dimensions to accommodate the required design parameters of the building.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA LAUX whose telephone number is (571)272-8228. The examiner can normally be reached on Monday thru Thursday, 9:00am to 5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Jessica Laux/
Primary Examiner, Art Unit 3635